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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/533,964

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EXAMINER

RUSH, ERIC

ART UNIT

PAPER NUMBER

2624

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/533,964	<b>Applicant(s)</b> COVA ET AL.	
	<b>Examiner</b> ERIC RUSH	<b>Art Unit</b> 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/10/2006</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities: The arrangement of the specification lacks appropriate section headings.

Appropriate correction is required.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. On line 21 of claim 1 it is unclear to how a digitized image can be "sent to algorithm below a predetermined threshold". Appropriate correction is required.
4. Claim 1 recites the limitation "said algorithm processing means" in line 22. There is insufficient antecedent basis for this limitation in the claim.
5. Claim 1 recites the limitation "said corrected image" in lines 23 - 24. There is insufficient antecedent basis for this limitation in the claim.
6. Claims 2 - 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 2 – 4 are rejected as being dependent upon a rejected base claim and hence the same reasons of insufficient antecedent basis.
7. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The elements of the equation are not defined in the claims and render the claims indefinite. All components of any equation need to be defined as in the specification. For instance,  $0_1$  is not defined.

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8. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The equation is unclear and indefinite in regards to  $r \cdot \cos(\pi/2 - 0_1 P/r)$  it is unclear if it is  $((0_1 \cdot P)/r)$  or  $(0_1 \cdot (P/r))$ . Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 1 – 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta et al. EP 0617919 A1 and further in view of Bergenek et al. U.S. Publication No. 2002/0050713 A1.

- With regards to claim 1, as best understood by the Examiner, Ohta et al. teach a method of identifying a person by fingerprint/toeprint recognition,

consisting in: producing a digital photograph giving a digitized image of a fingerprint/toeprint or part of a fingerprint/toeprint present on a surface of an object; (Ohta et al., Column 2 Line 45 – Column 3 Line 8) analyzing said digitized image of the fingerprint/toeprint; (Ohta et al., Figs. 1 & 4, Column 3 Line 40 – Column 4 Line 32) characterized, when the fingerprint/toeprint is on a curved surface, a pre-established model of a curved semicylindrical or semiconical surface of revolution having a shape corresponding or close to the shape of the curved surface or of a portion of the curved surface, to which the fingerprint/toeprint is fixed, is selected, (Ohta et al., Fig. 4, Column 2 Line 45 – Column 3 Line 8 and Column 3 Line 40 – Column 4 Line 32) information about the respective positions of the two diametrically opposed generatrices visible in the digitized image is sent to algorithm below a predetermined threshold, by projecting it onto a plane using said algorithm processing means, (Ohta et al., Column 3 Line 40 – Column 4 Line 32) said corrected image showing the characteristic points of said fingerprint/toeprint in a plane. (Ohta et al., Column 4 Lines 22 - 51) Ohta et al. fail to specifically teach detecting characteristic points therein; exchanging the digital data of the detected characteristic points with a data bank storing digital data of the characteristic points of a multiplicity of fingerprints/toeprints in its memory, said stored digital data corresponding to plane images of the multiplicity of fingerprints/toeprints; comparing the digital data of the abovementioned

detected characteristic points with the digital data stored in the memory of the data bank; and identifying a person possessing said fingerprint/toeprint as a result of the above comparison. Bergenek et al. teach detecting characteristic points therein; (Bergenek et al., Page 3 Paragraphs 0050 – 0051 and Page 5 Paragraph 0079) exchanging the digital data of the detected characteristic points with a data bank storing digital data of the characteristic points of a multiplicity of fingerprints/toeprints in its memory, (Bergenek et al., Page 3 Paragraph 0049 and Page 4 Paragraphs 0052 - 0053) said stored digital data corresponding to plane images of the multiplicity of fingerprints/toeprints; (Bergenek et al., Fig.s 3a & 3b, Page 4 Paragraph 0059) comparing the digital data of the abovementioned detected characteristic points with the digital data stored in the memory of the data bank; (Bergenek et al., Page 4 Paragraphs 0052 - 0053) identifying a person possessing said fingerprint/toeprint as a result of the above comparison; (Bergenek et al., Fig. 2, Page 4 Paragraph 0053 the person is identified as an authorized person utilizing the planar projected, corrected version, of the fingerprint image obtained from Ohta et al.) and wherein the digitized image is sent to algorithm below a predetermined threshold. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Ohta et al. to exclude the prism, guide, and angle compensation. This modification would have been prompted in order to allow for digital photographs of fingerprints to

be taken from a myriad of angles and not be constrained to the guide on which they are present, although the curved object surface of the present invention may be construed as the guide. Furthermore it would have been obvious to one of ordinary skill in the art at the time of the invention to further customize the modified teachings of Ohta et al. to include the specified teachings of Bergenek et al. This modification would have been prompted in order to compare fingerprints acquired from Ohta et al. to a data bank of fingerprints in order to try and locate a match and thus utilize the acquired and corrected fingerprints to serve their well-known purpose, identification.

- With regards to claim 2, Ohta et al. in view of Bergenek et al. teach the method as claimed in claim 1. Ohta et al. teach the method characterized in that the algorithm processing means associate, with each point in the initial digitized image of the fingerprint/toeprint rolled up on the curved surface, a point lying in a projection plane such that the linear distance of said point in the plane relative to the projection of the axis of said surface is equal to the curvilinear distance of said point in the initial image relative to the projection of said axis onto said surface. (Ohta et al., Fig. 4, Column 4 Lines 6 - 51)



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- With regards to claim 3, Ohta et al. in view of Bergenek et al. teach the method as claimed in claim 2. Ohta et al. fail to specifically teach characterized in that, at any point (P) in the projection plane, the algorithm processing means determine a projected point (P1) such that:  
$$O_1P_1 = r \cos(\pi/2 - O_1P/r)$$
 being the projection of the axis of the surface onto said plane and r being the estimated radius of the curved surface, and then associate with the projected point (P1) in the plane, a point (P2) on the curved surface, the projected point (P1) of which is the projection on the plane. The Examiner takes Official Notice of the fact that  
$$O_1P_1 = r \cos(\pi/2 - O_1P/r)$$
 appears to be a slightly modified version of a notoriously well-known equation in mathematics used for converting polar coordinates to Cartesian coordinates,  $x = r \cos(\theta)$ . Using the figures the Examiner concludes that  $O_1$  is the origin and thus can be eliminated leaving  $P_1 = r \cos(\pi/2 - P/r)$  which is merely shifted version of  $x = r \cos(\theta)$ , wherein  $P/r = \theta$ . It would have been obvious to one of ordinary skill in the art to modify the combined teachings of Ohta et al. in view of Bergenek et al. to include the equation for converting polar to Cartesian coordinates. This modification would have been prompted in order to quickly adapt to different curvatures, radii, of platens wherein the coordinate compensation processing section would only need to update/change the value of r.

***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Hara U.S. Patent No. 5,703,958; which is directed to a picture processing method for correcting distorted pictures.
- Senior U.S. Publication No. 2002/0126883 A1; which is directed to a system and method for transforming fingerprints to improve recognition.
- Fishbine et al. U.S. Patent No. 6,038,332; which is directed to a method and apparatus for capturing the image of a palm.
- Ort et al. U.S. Patent No. 5,926,555I which is directed to a fingerprint identification system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIC RUSH whose telephone number is (571)270-3017. The examiner can normally be reached on 7:30AM - 5:00PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew C Bella/  
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ER